18. (Twice Amended) An optical amplifier comprising:

an optical coupler receiving an optical signal, which includes an optical signal light and dividing the received optical light into first and second optical lights;

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an optical filter operatively connected to the optical coupler for passing the optical signal light from the first optical light, and for ascertaining a level of the optical signal through a detector; said detector being operatively connected to the optical filter for receiving the optical signal light passed through the optical filter to detect the level of the optical signal; and

an optical fiber amplifier formed with erbium operatively connected to the optical coupler for amplifying the second optical light with excitation by an exciting light.

REMARKS

Claims 15-19 are pending in this application, and stand rejected under 35 U.S.C. §103(a) as unpatentable over Applicants' disclosure of the prior art, (Fig. 15 and pages 3-4 of the instant specification), or Aida et al., when taken with Heidemann, (U.S. Patent No. 5,335,109).

Applicants respectfully disagree with this rejection.

To the best of Applicants' understanding, the Examiner contends that since Heidemann is exemplary of "the use of an optical filters [sic] positioned immediately preceding the photodetector of an optical amplifier system to block pump radiation having passed through the amplifier", (Final Office Action, page 3, lines 18-20), an optical filter from Heidemann, positioned immediately upstream of a photodetector of an optical amplifier system, may be combined with Fig. 15 to produce the present invention.

However, it is respectfully submitted that this is incorrect. The only photodector shown in Heidemann is the photo diode 1. Optical filter 6b, which immediately precedes photo diode 1, is <u>downstream</u> of erbium-doped fiber amplifier 3. The placing of optical filter 6b upstream of the optical amplifier in Fig. 15 simply would result in the filter being placed on the optical fiber transmission path 1 in Fig. 15, which would still not produce the present invention. There is no teaching in Heidemann to place the optical filter <u>between</u> the coupler 10 and photo diode 11 in Fig. 15, as claimed in claims 15-19, the coupler 10 being <u>upstream</u> of the optical fiber amplifier 2. The only optical coupler disclosed, taught or suggested anywhere in Heidemann is the pump coupler 5 which is <u>downstream</u> of the erbium-doped fiber amplifier 3.

Any argument that the optical filter 6b should be placed between coupler 10 and photo diode 11 in Fig. 15, analogously to its placement between pump coupler 5 and photo diode 1 in Heidemann, is rebutted by the fact that Heidemann teaches <u>away</u> from such a result. In Heidemann, optical filter 6a, which is <u>upstream</u> of fiber amplifier 3, is placed on the <u>direct light transmission path</u> before the fiber amplifier 3, and there are <u>no</u> couplers or photo diodes placed before fiber amplifier 3 in Heidemann.

In addition, Heidemann is directed towards greater control over the level of an electrical <u>output</u> signal produced by an optical to electric transducer. The use of filters upstream and downstream from the optical amplifier aid in achieving the greater control over electrical output since they absorb extraneous pump light from a pump source 4 that controls the gain of the erbium-doped optical fiber amplifier 3. In contrast, the optical filter claimed herein is not directed towards gaining greater control over the optical and

hence electrical output, but rather the optical filter claimed herein is directed towards ascertaining the level of the optical input.

The Examiner answers these arguments regarding the differing purposes for the filter of Appellants from that of Heidemann by stating that such arguments are not relevant since it is the showing of using the filter to minimize pump noise that is applicable, (Final Office Action, page 7, lines 7-9). However, the Examiner's conclusion that the showing of using the filter to minimize pump noise is the relevant purpose simply ignores the fact that the optical filter 20 in Fig. 7 of the instant invention is placed upstream of the fiber amplifier 2 and between coupler 10 and photo diode 11 in order to aid in ascertaining the level of the optical input by photo diode 11. In Heidemann, in contrast, there is no teaching, disclosure, or suggestion of a purpose of ascertaining a level of optical input. Rather, the optical filter disclosed in Heidemann is directed solely towards gaining greater control over the optical, and hence, electrical output. Therefore, there would be no reason to place the optical filter 6b in Heidemann in a position upstream of the fiber amplifier between an added coupler 10 and a photo diode 11. Such an arrangement would be directed towards ascertaining a level of optical input, when Heidemann is solely directed towards greater control of optical, and hence, electrical output.

Aida et al., in the words of the Examiner, discloses "signal input splitting and mounting so as to control pump power (see, inter alia, Fig. 1A)", (Final Office Action, page 3, lines 16-17), and, thus is not directed towards determining the level of the optical input, as is the invention claimed herein.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached pages are captioned **"VERSION WITH MARKINGS TO SHOW CHANGES MADE."**

CLOSING

An earnest effort has been made to be fully responsive to the Examiner's objections. In view of the above amendments and remarks, it is believed that claims 15-19 are in condition for allowance. Passage of this case to allowance is earnestly solicited.

However, if for any reason the Examiner should consider this application not to be in condition for allowance, he is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper, not fully covered by an enclosed check, may be charged on Deposit Account 08-1634.

Respectfully submitted,

Michael I. Markowitz
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Enclosures: Version With Markings to Show Changes Made

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS

Claims 15, 16, and 18 have been rewritten as follows:

15. (Three Times Amended) An optical amplifier comprising:

an input terminal receiving an optical input signal;

an optical coupler dividing the optical input signal into a first optical signal and a second optical signal;

an optical filter operatively connected to the optical coupler for passing the first optical input signal, and for ascertaining a level of the optical input signal through a detector; said detector being operatively connected to the optical filter for receiving the first optical signal passed through the optical filter to detect the level of the optical input signal; and

an optical fiber amplifier <u>formed with erbium</u> operatively connected to the optical coupler for amplifying the second optical signal with excitation by an exciting light.

16. (Three Times Amended) An optical amplifier comprising:

an input terminal receiving an optical input signal;

an optical coupler dividing the optical input signal into a first optical signal and a second optical signal;

an optical filter operatively connected to the optical coupler for passing the first optical signal, blocking an exciting light, which exists along with the first optical signal, and for ascertaining a level of the optical input signal through a detector; said detector

being operatively connected to the optical filter for receiving the first optical signal passed through the optical filter to detect the level of the optical input signal; and

an optical fiber amplifier <u>formed with erbium</u> operatively connected to the optical coupler for amplifying the second optical signal with excitation by the exciting light.

18. (Twice Amended) An optical amplifier comprising:

an optical coupler receiving an optical signal, which includes an optical signal light and dividing the received optical light into first and second optical lights;

an optical filter operatively connected to the optical coupler for passing the optical signal light from the first optical light, and for ascertaining a level of the optical signal through a detector; said detector being operatively connected to the optical filter for receiving the optical signal light passed through the optical filter to detect the level of the optical signal; and

an optical fiber amplifier <u>formed with erbium</u> operatively connected to the optical coupler for amplifying the second optical light with excitation by an exciting light.